

**REMARKS**

In accordance with the foregoing, claims 1, 11-13, 37, 43-45 and 65 have been amended and claims 3-10, 17-27, 32-36, 38-42, 46-48, 52-64 and 66-70 have been cancelled without prejudice or disclaimer. Claims 1, 2, 11-16, 28-31, 37, 43-45, 49-51 and 65 are pending. Claims 1 and 37 are the independent claims. Proper support for the amendments to the claims can be found in the specification at least at paragraphs [0020], [0030], [0042] and [0044]. No new matter is presented in this Amendment.

As a result, entry of the forgoing amendment is proper under 37 C.F.R. §1.116(b) because these amendments simply respond to the issues raised in the final rejection, and the foregoing amendments are believed to remove the basis of the outstanding rejections, and to place all claims in condition for allowance.

**REJECTIONS UNDER 35 U.S.C. §112:**

Claims 1-31, 37-51, 64-65 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants respectfully traverse this rejection for at least the following reason.

Independent claims 1 and 37 have been amended to correct the minor informality noted by the Examiner. Accordingly, Applicants assert that independent claims 1 and 37, as amended, fully comply with the requirements of 35 U.S.C. §112, second paragraph and therefore respectfully request that the rejection of claims 1 and 37 be withdrawn. Applicants, further request that the rejection of the dependent claims also be withdrawn since they were rejected because of their dependency from claims 1 and 37, which have been corrected.

**REJECTIONS UNDER 35 U.S.C. §102:**

Claims 1-9, 17-27, 37, 46-48 and 64 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 5,658,134 to Shiratori et al.

Applicants respectfully traverse this rejection for at least the following reason.

Regarding the rejection of independent claim 1, it is noted that claim 1, as amended, recites a multi-layer structure comprising a substrate; and a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Shiratori discloses a recording medium including a magnetic layer 3 formed on a transparent substrate 1, consisting of polycarbonate or glass, through a dielectric layer 2, and a dielectric layer 4 serving as a protective film formed on the magnetic layer 3. The magnetic layer can consist of a rare earth-iron group amorphous alloy and the dielectric layers are formed of SiN. Accordingly, Shiratori discloses a recording medium consisting of four layers. Contrary to Shiratori, the structure recited in independent claim 1 does not recite four layers but rather includes a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Accordingly, Applicants respectfully assert that the rejection of independent claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Shiratori fails to teach or suggest each feature of independent claim 1, as amended.

As pointed out in MPEP § 2131, "[t]o anticipate a claim, the reference must teach every element of the claim." Thus, "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. Verdegaal Bros. v. Union Oil Co. Of California, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987)."

Furthermore, Applicants respectfully assert that the rejection of dependent claim 2 under 35 U.S.C. §102(b) should be withdrawn at least because of its dependence from claim 1 and the reasons set forth above, and because the dependent claim includes additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claim 2 also distinguishes over the prior art.

Regarding the rejection of claims 3-9, 17-27 and 64 it is noted that these claims have been cancelled without prejudice or cancelled. Accordingly, the rejection of these claims is

moot.

Regarding the rejection of independent claim 37, it is noted that claim 37 recites a master for manufacturing an optical disc, the master comprising a substrate, and a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the master, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

As noted above, Shiratori discloses a recording medium consisting of four layers and contrary to Shiratori, the structure recited in independent claim 37 includes a transformation layer comprising a metal oxide layer formed on the substrate.

Accordingly, Applicants respectfully assert that the rejection of independent claim 37 under 35 U.S.C. § 102(b) should be withdrawn because Shiratori fails to teach or suggest each feature of independent claim 37, as amended.

Regarding the rejection of claims 46-48, it is noted that claims 46-48 have been cancelled without prejudice or disclaimer of the subject matter recited therein. Accordingly, the rejection of claims 46-48 is moot.

Claims 1, 10-12, 37, 42-44 and 65 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent 4,626,480 to Shigeta et al.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of independent claim 1, it is noted that claim 1, as amended, recites a multi-layer structure comprising a substrate; and a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Shigeta discloses a magnetic recording medium for high density recording including a magnetic thin film formed on at least one side of a non-magnetic substrate, the magnetic film

made of a magnetic material and a tungsten oxide (column 2, lines 9-15). Shigeta makes no suggestion of a transformation layer comprising a metal oxide layer formed on the substrate, or that a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot, as recited in independent claim 1.

Accordingly, Applicants respectfully assert that the rejection of independent claim 1 under 35 U.S.C. § 102(b) should be withdrawn because Shigeta fails to teach or suggest each feature of independent claim 1, as amended.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 11, 12 and 65 under 35 U.S.C. §102(b) should be withdrawn at least because of their dependence from claim 1 and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 11, 12 and 65 also distinguish over the prior art.

Regarding the rejection of claim 10, it is noted that claim 10 has been cancelled without prejudice or disclaimer of the subject matter recited therein. Accordingly, the rejection of claim 10 is moot.

Regarding the rejection of independent claim 37, it is noted that claim 37 recites a master for manufacturing an optical disc, the master comprising a substrate, and a transformation layer comprising a metal oxide layer formed on the substrate, wherein a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the master, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

As noted above, Shigeta makes no suggestion of a transformation layer comprising a metal oxide layer formed on the substrate, or that a volume of a portion of the transformation layer irradiated by a laser beam changes when a temperature of the portion exceeds a predetermined temperature forming a pit pattern on the multi-layer structure, the pit pattern having a diameter smaller than a diameter of the laser beam spot.

Accordingly, Applicants respectfully assert that the rejection of independent claim 37

under 35 U.S.C. § 102(b) should be withdrawn because Shigeta fails to teach or suggest each feature of independent claim 37, as amended.

Furthermore, Applicants respectfully assert that the rejection of dependent claims 43 and 44 under 35 U.S.C. §102(b) should be withdrawn at least because of their dependence from claim 37 and the reasons set forth above, and because the dependent claims include additional features which are not taught or suggested by the prior art. Therefore, it is respectfully submitted that claims 43 and 44 also distinguish over the prior art.

Regarding the rejection of claim 42, it is noted that claim 42 has been cancelled without prejudice or disclaimer of the subject matter recited therein. Therefore, the rejection of this claim is moot.

**REJECTIONS UNDER 35 U.S.C. §103:**

Claims 38-41 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shiratori as applied to claim 37.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claims 38-41, it is noted that claims 38-41 have been cancelled without prejudice or disclaimer of the subject matter recited therein. Accordingly, the rejection of claim 38-41 is moot.

Claims 13-16, 28-31, 45 and 49-51 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shiratori as applied to claims 1 and 37 in view of Shigeta as applied to claims 1, 10, 37 and 42.

Applicants respectfully traverse this rejection for at least the following reasons.

Regarding the rejection of claims 13-16 and 28-31, it is noted that these claims depend from independent claim 1, and as noted above, Shigeta neither teaches nor suggests the novel features recited in independent claim 1. Accordingly, Applicants respectfully request that the rejection of claims 13-16 and 28-31 under 35 U.S.C. §103(a) be withdrawn.

Regarding the rejection of claims 45 and 49-51, it is noted that these claims depend from independent claim 37 and as noted above, Shigeta neither teaches nor suggests the novel features recited in independent claim 37. Accordingly, Applicants respectfully request that the rejection of claims 45 and 49-51 under 35 U.S.C. §103(a) be withdrawn, at least because of their dependency from claim 37.

**CONCLUSION:**

There being no further outstanding objections or rejections, it is submitted that the application is in condition for allowance. An early action to that effect is courteously solicited.

Finally, if there are any formal matters remaining after this response, the Examiner is requested to telephone the undersigned to attend to these matters.

If there are any additional fees associated with filing of this Amendment, please charge the same to our Deposit Account No. 503333.

Respectfully submitted,

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